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New York Academy of Sciences Prof. Osborn, in arguing that the environment is one of the causes of adaptations, stated that lime is the cause of teeth, because teeth depend on the existence of lime and vary with its abundance. It is true that there could be no teeth if there were no lime, but teeth do not result from the mere presence of lime in the environment. Lime is one of the material causes and occasions of teeth, but it has not been shown that it is their efficient cause. It would seem that the environment is more often the cause of the destruction of life than the cause of its development.

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#### INSTINCT.

IN Prof. Mills' communications on 'Instinct' he seems to have missed the point in the case of each of those criticised—the 'writer of the note,' Prof. Morgan and myself. In the case of the fowl's drinking, it is not the mere fact that drinking and eating may differ in the degree to which the performance is congenital; the reports seem to show that this varies in different fowl; but that instincts (in this case drinking) may be only half congenital, and may have to be supplemented by imitation, accident, intelligence, instruction, etc., in order to act, even when the actions are so necessary to life that the creature would certainly die if the function were not performed. That is the interesting point.

Then, in criticising me, Prof. Mills accuses me of ignoring the 'effects of environment and of use.' On the contrary, these are just the facts which I appeal to. By adaptations to the environment and by use the creature manages to keep alive; other creatures die off; so certain determinate directions of congenital variation are singled out and inherited. Thus phylogenetic variations become determinate, just through these ontogenetic adaptations. This takes the place of the Lamarckian factor. Lamarckism is an 'obvious' resort in all cases, of course, but it seems to me so easy that in many cases it is shallow in the extreme.

But my view is very far from being Weismannism. I reach determinate variations by means of new functions or adaptations which

keep certain animals alive to propagate. It is really a new theory, as Prof. Osborn, who has reached about the same point of view, declares. This is also just the value which Prof. Morgan attaches to his observations.

J. MARK BALDWIN.

PRINCETON, April 17, 1896.

#### STUDIES IN THE MORAL DEVELOPMENT OF CHILDREN.

##### *The Relation of the Child to Authority.*

It is desired to obtain data for a study of the attitude of young children toward parental authority, with a view to determining what sort of discipline, instruction and appeal is best calculated to develop in children a proper recognition of the parent's authority and a readiness to submit to it.

Parents who are willing to aid in the investigation are requested to carry out the following experiments, and to report the results.

1. Try different punishments for the same offence, as follows:

(a) *For Naughtiness at Table*: (1) Corporal punishment, though not necessarily severe. (2) Sending the child away from the table, with permission to return as soon as he is ready to be good. (3) Having the child eat by himself in the kitchen.

(b) *For Sauciness to Parents*: (1) Corporal punishment. (2) Sending the child into the bedroom to stay till he is ready to take back what he said. (3) Refusing to caress the child or to be caressed by him until he is ready to make up and say he is sorry. Of course, it may sometimes be hours after the offence before occasion is given for applying this last penalty, the parent meanwhile seeming to have ignored the offence. If the child has not made up before bedtime, then put him to bed without his usual kiss, explaining why you do so.

(c) *For Taking a Toy Belonging to a Playmate* (whether by force or stealth), with a resulting outcry on the part of the playmate: (1) Compelling the child by corporal punishment, or the threat of it, to return the toy to the playmate. (2) Taking the toy away by force and returning it to the playmate, and sending the child into the bedroom for five minutes. (3) Giving one of the child's favorite toys (not

at the time in his hands) to the playmate, and allowing him to keep it until the child wants an exchange badly enough to ask it of the playmate, apologizing as he does so for having taken his toy.

*Remarks:* (1) Try the experiments as to punishment on children from three to six and one-half years old. (2) In each case try the suggested penalties in the order given, and make two trials of each before passing to the next. (3) In no case carry the corporal punishment to the extent of 'breaking the child's will.' (4) If you object on principle to corporal punishment, state it in your record, and try the two remaining penalties in the order given.

*What to Record:* (1) Which of the three penalties is most effective in securing reform, and which the least so? (2) Which penalty arouses most feeling against the parent, and which the least? (3) Such actions or comments of the child during, or with reference to, the punishment as seem to you worthy of note.

II. Give commands varying in arbitrariness, as follows:

(a) Shut the door, so the room won't get cold.

(b) Carry this book into the bedroom and put in on the bed.

(c) Move that chair to the other side of the table. \* \* \* Now move it back where it was.

(d) A double experiment. (1) Pick up these pieces of paper (a dozen pieces which you have thrown on the floor in the child's absence). (2) On another occasion throw a dozen pieces of paper on the floor while the child is looking, and request him to pick them up.

*Remarks on the Above Experiment:* (1) Give the commands only to children between two and one-half and four and one-half years of age. (2) Give the several commands at different times, and to each child separately. (3) Give the commands seriously—in such a way that the child will not think you are in fun. (4) Give them when the child is in good humor and behaving well, so he will have no reason to think he is being punished. (5) If the child meets any of the questions with a 'why?' say gently, but firmly, 'Because I told you to.'

*What to Record:* (1) In the case of what com-

mands the child asks 'why?' (2) Whether he shows surprise at any of the commands; and if so, which excite most surprise. (3) Any objections or comments the child may make. (4) How readily the several commands are obeyed, especially which are most reluctantly obeyed. (5) Whether any of the commands provoke indignation or anger in the child.

III. Effect of the manner in which commands are given.

Determine through observation and experiment: (a) What mode of giving a command secures the *quickest* obedience. (b) What mode secures the most *willing* and *cheerful* obedience.

Note especially how the child is affected by sharp and abrupt commands, as compared with the effect upon him of commands given in gentle but firm tone. (Commands may also be: direct or interrogative, *i. e.*, 'do this,' or, 'will you do this?' and with or without a 'please.')

IV. Compare the effect of Praise upon the child with the effect of Censure, as follows:

(a) *To produce in the child a love of cleanliness*—as to face, hands and dress: (1) Ignoring the occasionally clean and neat appearance of the child, make frequent disparaging remarks about his dirty face and hands, and censure him when he soils his clothes in any deliberate or careless manner. (2) Ignoring the usually more or less untidy appearance of the child, praise him warmly whenever he has washed himself (or cheerfully allowed himself to be washed) and appears *exceptionally* neat and clean.

(b) *To secure good behavior of the child during the father's absence:* (1) Let the mother in reply to the father's inquiries as to the child's conduct during his absence, relate wherein the child has been naughty, and let the father censure him for his conduct. (2) When the child has been *unusually* good, let the father, in the hearing of the child, inquire about his conduct, and when the mother has praised him warmly for his good behavior, let the father add his commendation.

*Remarks:* (1) Make the trial of Praise vs. Censure on children from three to six and one-half years old. (2) Give the first method of procedure a fair trial before trying the second.

*What to Record:* (1) Which method you find the more effective in securing the desired re-

sult. (2) The approximate number of trials made of each method before reaching your conclusion.

V. How does Pretending to Cry, on the part of the parent, affect the child: (a) As a deterrent from disobedience?

(b) In making him sorry for obedience? (Try this experiment but a few times, and only on children from two to four years old.)

VI. Observe the child's comments on hearing the following stories, and endeavor to elicit his moral judgment regarding each of the two incidents:

(a) One day a lady gave a stick of nice, red candy to a little girl, named Bessie (or to a little boy, named Robbie, if the child to whom you are telling the story is a boy). Bessie took the candy home and showed it to her mamma. Her mamma said, "How nice it looks; you must give it to me, to eat." Bessie said, "I won't! the lady gave the candy to me, and I want it myself." Then mamma took the candy away from Bessie and whipped her because she wouldn't give the candy to mamma. (Will the child see the arbitrariness of the command and of the punishment?)

(b) One day mamma gave Bessie (or Robbie) a pitcher full of milk, and told her to carry it into the pantry and put it on the shelf. Bessie walked very carefully, so as not to spill the milk; but when she came to the pantry door her little sister, Ella (or his little brother, Jamie), ran against her and made her drop the pitcher. The pitcher broke all to pieces, and the milk ran all over the floor. Then mamma scolded Bessie and sent her into the bedroom, because she broke the pitcher and spilled the milk. (Will the child see the injustice in the mother's treatment of Bessie? If so, what treatment will the child propose?)

*Remarks:* (1) Tell the stories to children from three to six and one-half years old. (2) Tell the two stories at different times and to each child separately. (3) In trying to elicit the child's judgment, be careful not to suggest ideas.

General Information. By way of introduction to your record of the results of the above experiments, state: (a) The child's *nationality*. (b) His *age in months* when the several experi-

ments are tried. (c) Whether he is a *normally strong* and healthy child, physically and mentally. If not, in what way he is less well or strong than the average child. (d) His *peculiarities of temperament*, especially how far he is naturally *irritable, obstinate or domineering*.

Parents who are willing to aid in the above investigation are requested to send at once to the undersigned: (a) their own names and addresses. (b) The names and respective ages (in months) of the children that are to be observed.

The information secured in response to this paper will be used in a general and statistical way, without publication of names.

It is hoped your observations may be completed, and the report of results sent in, within two, or, at most, three months after your receipt of this paper; but as much time should be taken as is necessary for accurate and full results. Address, J. F. MORSE.

WISCONSIN UNIVERSITY, MADISON, WIS.

#### SCIENTIFIC LITERATURE.

*Frail Children of the Air.* Excursions into the world of butterflies. By SAMUEL HUBBARD SCUDDER. Boston and New York, Houghton, Mifflin Co. 1895. \$1 50.

This will prove a delightful book for the coming summer season. Although its title may not be especially descriptive of the contents, the book is devoted to an account of the more interesting peculiarities in the structure, lives, and habits of our commoner butterflies. The subjects treated are the following: Butterflies in disguise, the struggle for existence in the genus *Basilarchia*, deceptive devices among caterpillars, butterflies as botanists, the names of butterflies, color-relations of chrysalids to their surroundings, the White Mountains of New Hampshire as a home for butterflies, butterfly sounds, nests and other structures made by caterpillars, postures of butterflies at rest and asleep, the eggs of butterflies, psychological peculiarities in our butterflies, social caterpillars, the fixity of habit in butterflies, how butterflies pass the winter, the oldest butterfly inhabitants of New England, protective coloring in caterpillars, aromatic butterflies, the ways of butterflies, and similar topics. Those